REMARKS/ARGUMENTS

The present Amendment is responsive to the non-final Office Action mailed December 10, 2007, in the above-identified application.

Claims 1-18 are the claims currently pending in the present application.

Claims 1, 12 and 18 are amended to clarify features recited thereby. Further, claims 2-4, 8 and 10-11 are amended to conform them more closely to U.S. patent practice style.

Applicant thanks the Examiner for acknowledging the claim for foreign priority and the receipt of the priority document. Further, Applicant thanks the Examiner for acknowledging review and consideration of the references cited in the Information Disclosure Statements filed on May 27, 2005, August 26, 2005 and September 22, 2006.

Objection to Claims 9 and 11 under 37 C.F.R. § 1.75

Claims 9 and 11 are objected to under 37 C.F.R. § 1.75(c) on the ground that they are in improper dependent form since they fail to further limit the subject matter of a previous claim.

Claim 9 is amended. Claim 11 requires that "at least one of the local gradient and the local normal vector of the surface is represented by being encoded as at least one of a grayscale and color shade." (Underline added.) These features are not recited by any of the claims from which claim 9 depends.

Rejection of Claims 1-13, 17 and 18 under 35 U.S.C. § 102

Claim 1-13, 17 and 18 are rejected under 35 U.S.C. § 102(b) as being anticipated by Nayar et al., U.S. Patent No. 4,912,336. Reconsideration of this rejection is respectfully requested.

Claims 1 and 12 require uniquely allocating to each normal vector a luminance back-scattered by the scattering body, and allocating the back-scattered luminance to the illumination strengths of recorded images.

Without intending to limit the scope of the claims, an advantage or effect provided according to an aspect of Applicant's invention as claimed in independent claims 1 and 12 is that a combination of a photometric stereo method and a deflectometric method are used to obtain information about the surface of an object, and thus optically glossy surfaces as well as optically smooth surfaces and optically rough surfaces can be effectively scanned, evaluated or recorded.

When the light source is in operation, only a certain area of the scattering body is illuminated so as to produce a planar coding of the locations on the diffuser surface. Further, as a result of the semi-spherical shape or similar shape of the scattering body illustrated in the embodiment shown in Figure 3, each location on the diffuser surface can be clearly assigned a normal vector. Thus, the back-scattered luminance can be more readily tracked and allocated. As described in Applicant's disclosure:

> If the position on the scattering body is now uniquely allocated to the normal vector n, the latter is uniquely allocated to the back-scattered luminance and this is in turn allocated to the illumination strengths E_1, E_2 and E_3 of the images recorded by the camera, then the position and illumination strengths are uniquely allocated to one another. From the illumination strengths in the images, it is therefore possible to deduce which position of the scattering body has scattered the light. This means that the scattering body surface has been uniquely encoded. With just three illumination directions, any position of the scattering body surface can be encoded unequivocally in three-dimensional space. **This encoding has clear advantages over other methods which, for example, locally illuminate the scattering body step by step. Such methods require a multiplicity of illumination directions but can only record a single line on the scattering body, which corresponds to two-dimensional recording of the object.**

(Specification, paragraph bridging pages 15 and 16, underline added.)

The subject matter disclosed by Nayar falls well within the described prior art. Nayar discloses a surface shape and reflectance extraction system using a photometric sampling apparatus in which a light-diffusing medium, such as a translucent globe, and an array of point light sources are arranged around a common site (Nayar, Abstract, underline added). Nayar discloses that the light sources are switched on in succession so that they each illuminate portions of the approximately spherical diffuser while a camera records an image.

Nayar does not disclose or suggest allocating to each normal vector a luminance back-scattered by the scattering body, as required by claims 1 and 12. Further, Nayar does not disclose or suggest allocating the back-scattered luminance to the illumination strengths of recorded images, as further required by claims 1 and 12.

Claims 2-11 and 18 depend from claim 1, and claims 13 and 17 depend from claim 12. Accordingly, claims 2-11, 13, 17 and 18 are patentably distinguishable over the cited art for at least the same reasons as their respective base claims.

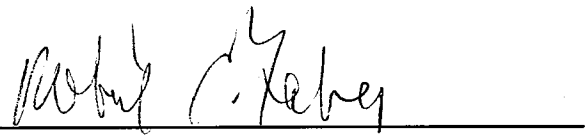
Rejection of Claims 13-16 under 35 U.S.C. § 103

Claims 13-16 are rejected under 35 U.S.C. § 103(a) as being obvious from Nayar in view of the Examiner's own knowledge in the art. Reconsideration of this rejection is respectfully requested.

Claims 13-16 depend from claim 12 and are therefore patentably distinguishable over the cited art for at least the above-discussed reasons.

In view of the foregoing discussion, withdrawal of the objection and of the rejections and allowance of the claims of the application are respectfully requested.

Respectfully submitted,



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